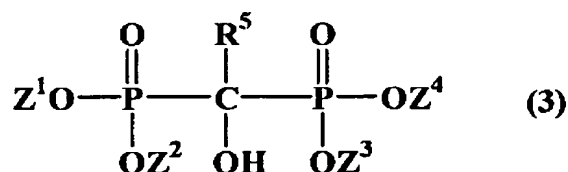
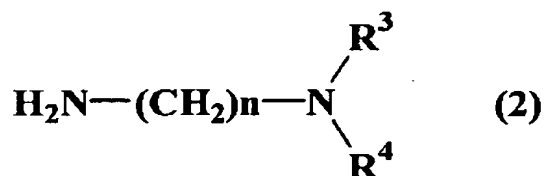
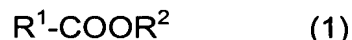
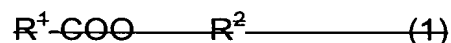


## ABSTRACT OF THE DISCLOSURE

A production process for a carboxylic amide compound in which color tone stability after the passage of time is good and in order to provide production processes for betaine, a quaternary ammonium salt and an amine salt using the above carboxylic amide compound, a production process for carboxylic amide and derivatives thereof characterized by reacting higher fatty acid or an ester thereof represented by the following Formula (1) with diamine represented by the following Formula (2) under the presence of an organic phosphonic acid compound represented by the following Formula (3) or adding the organic phosphonic acid compound after the reaction or after removing excess diamine after the reaction:



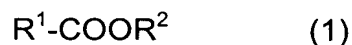
wherein each of the R and Z groups and n are defined.

*Please amend the paragraph beginning at page 5, line 1, as follows:*

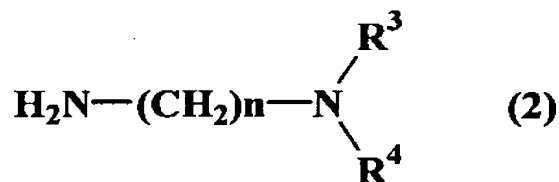
That is, the present invention comprises the following items (1) to (5).

(1) A production process for carboxylic amide and derivatives thereof, characterized by reacting higher fatty acid or an ester thereof represented by the following Formula

(1) with diamine represented by the following Formula (2) under the presence of 0.001 to 0.1 mass % of an organic phosphonic acid compound based on the whole amount of the higher fatty acid or the ester thereof described above:



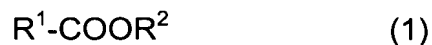
in Formula (1) described above,  $R^1$  represents a linear or branched alkyl group, an alkenyl group or a hydroxyalkyl group having 5 to 23 carbon atoms, and  $R^2$  represents a hydrogen atom, a linear or branched alkyl group having 1 to 4 carbon atoms or a residue obtained by removing one acyloxy group from glyceride;



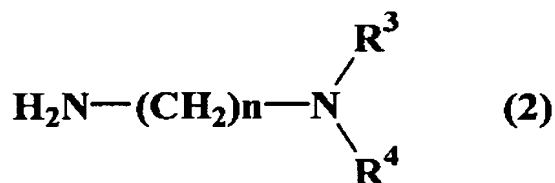
in Formula (2) described above,  $R^3$  and  $R^4$  represent an alkyl group having 1 to 4 carbon atoms and may be the same or different, and  $n$  represents a number of 2 to 4.

(2) A production process for carboxylic amide and derivatives thereof, characterized by reacting higher fatty acid or an ester thereof represented by the following Formula (1) with diamine represented by the following Formula (2) or removing excess diamine after the reaction and then adding 0.001 to 0.1 mass % of an organic

phosphonic acid compound based on the whole amount of the higher fatty acid or the ester thereof described above:

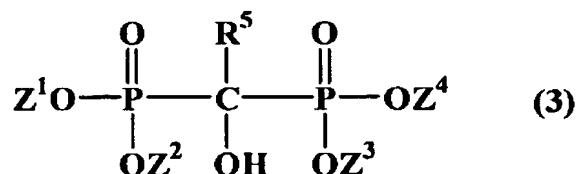


in Formula (1) described above,  $R^1$  represents a linear or branched alkyl group, an alkenyl group or a hydroxyalkyl group having 5 to 23 carbon atoms, and  $R^2$  represents a hydrogen atom, a linear or branched alkyl group having 1 to 4 carbon atoms or a residue obtained by removing one acyloxy group from glyceride;



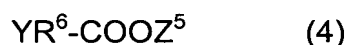
in Formula (2) described above,  $R^3$  and  $R^4$  represent an alkyl group having 1 to 4 carbon atoms and may be the same or different, and  $n$  represents a number of 2 to 4.

(3) The production process for carboxylic amide and derivatives thereof as described in the above item (1) or (2), wherein the organic phosphonic acid compound is diphosphonic acid or a salt thereof having a structure represented by the following Formula (3):

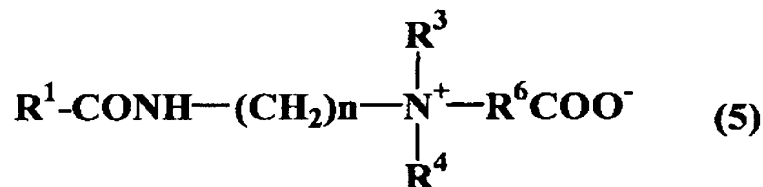


in Formula (3) described above,  $R^5$  represents a hydrogen atom or a lower alkyl group having 1 to 3 carbon atoms, and  $Z^1$ ,  $Z^2$ ,  $Z^3$  and  $Z^4$  each represent independently a hydrogen atom or an alkaline metal atom.

(4) A production process for betaine, characterized by producing betaine represented by the following Formula (5) by reacting the carboxylic amide compound obtained by the production process as described in the above item (1) to (3) with monohaloalkylcarboxylic acid or a salt thereof represented by the following Formula (4):



in Formula (4) described above, Y represents a halogen atom;  $R^6$  represents a linear or branched alkylene group having 1 to 3 carbon atoms; and  $Z^5$  represents a hydrogen atom or an alkaline metal atom;



in Formula (5) described above,  $R^1$ ,  $R^3$ ,  $R^4$ ,  $R^6$  and n are the same as described above.

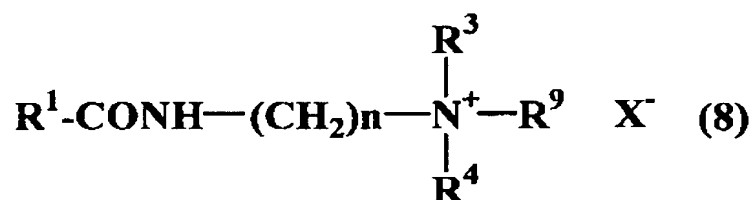
(5) A production process for a quaternary ammonium salt, characterized by producing a quaternary ammonium salt represented by the following Formula (8) by reacting the carboxylic amide compound obtained by the production process as described in the above item (1) to (3) with halogenated alkyl\_ represented by the following Formula (6) or dialkylsulfate represented by the following Formula (7):



in Formula (6) described above, Y represents a halogen atom, and R<sup>7</sup> represents an alkyl group having 1 to 4 carbon atoms;

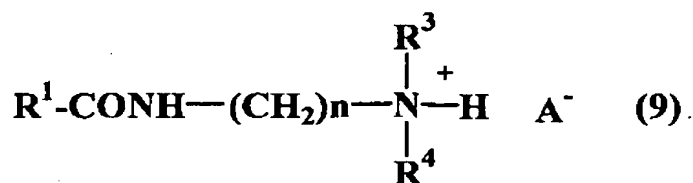
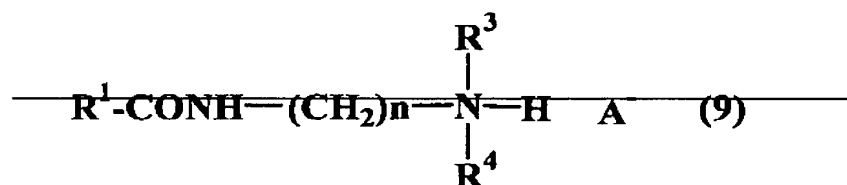


in Formula (7) described above, R<sup>8</sup> represents an alkyl group having 1 to 4 carbon atoms;



in Formula (8) described above, R<sup>1</sup>, R<sup>3</sup>, R<sup>4</sup> and n represent the same meanings as described above; R<sup>9</sup> represents R<sup>7</sup> or R<sup>3</sup>; and X represents Y or R<sup>8</sup>SO<sub>4</sub>.

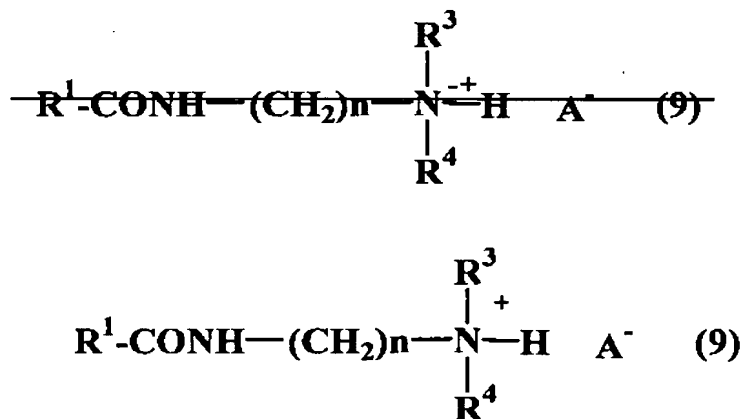
(6) A production process for an amine salt, characterized by producing an amine salt represented by the following Formula (9) by neutralizing the carboxylic amide compound obtained by the production process as described in any of the above items (1) to (3) with at least one neutralizing agent selected from organic acids, inorganic acids and acidic amino acids:



in Formula (9) described above,  $R^1$ ,  $R^3$ ,  $R^4$  and  $n$  represent the same meanings as described above, and  $A$  represents organic acid, inorganic acid or acidic amino acid.

*Please amend the paragraph at page 20, line 17, as follows:*

Further, in the production process for an amine salt according to the present invention (hereinafter referred to as "the fourth present invention"), an amine salt represented by the following Formula (9) in which a color tone is good can be obtained by neutralizing the carboxylic amide compound obtained by the production process described above with at least one neutralizing agent selected from organic acids, inorganic acids and acidic amino acids:



in Formula (9),  $R^1$ ,  $R^3$ ,  $R^4$  and  $n$  represent the same meanings as described above, and  $A$  represents organic acid, inorganic acid or acidic amino acid.